CLINICA CHIMICA ACTA
Vol. 34 (1971)

BLANK
PAGE

CLINICA CHIMICA ACTA

INTERNATIONAL MONTHLY OF CLINICAL CHEMISTRY

Vol. 34 (1971)

Sponsored by the following National Societies:

Association of Clinical Biochemists, *Great Britain*
Belgische Vereniging voor Klinische Chemie, Société belge de chimie clinique, *Belgium*
Nederlandse Vereniging voor Klinische Chemie, *The Netherlands*
Deutsche Gesellschaft für Klinische Chemie, *Germany*
Société française de biologie clinique, *France*
Société suisse de chimie clinique, Schweizerische Vereinigung für klinische Chemie, *Switzerland*

Editor-in-chief: C. P. Stewart, Edinburgh
Associate Editor: S. C. Frazer, Aberdeen

Regional Editors:
for the Americas - M. Rubin, Washington, D.C.
for the British Commonwealth - R. Gaddie, Birmingham
for all other territories, including Europe - E. J. van Kampen, Groningen

Editorial Secretary:
Th. Strengers, P.O. Box 4073, Amsterdam, The Netherlands

ELSEVIER PUBLISHING COMPANY
AMSTERDAM

All rights reserved: COPYRIGHT © 1971 BY ELSEVIER PUBLISHING CO., AMSTERDAM

PRINTED IN THE NETHERLANDS

CLINICA CHIMICA ACTA Vol. 34 (1971)

AUTHOR INDEX

AAKVAAG, A.
(G.L.C. of aldosterone in biological fluids) 197
ADLERCREUTZ, H.
(Evaluation of G.L.C. techniques for the estimation of oestrogens) 231
AGAR, N. S. see ROBERTS, J. 475
AIROLDI, L. see MARCUCCI, F. 321
ANAKURA, M. see MATSUDA, M. 491
ANKER, A. P. see KAMPEN, v., E. J. . . . 241
ANNAN, W., BROUGHTON, P. M. G., JOLLIFF, P.
(Frequency distribution of errors in the determination of serum urea and electrolyte values with the autoanalyzer) 481
ANTUN, F. T., PULLAR, I. A., ECCLESTON, D., SHARMAN, D. F.
(A fluorimetric method for the determination of 4-hydroxy-3-methoxyphenylglycol in urine) 387
ARASHIMA, S. see MATSUDA, I. 491
ASHWELL, G. see SNYDER, S. 449
BARNARD, W. P., LOGAN, R. W.
(An automated method for urinary "oestriol" determination in pregnant and non-pregnant subjects) 377
BEELEN, G. C. see KLEIJN, v.D., E. 345
BERRY, D. J., GROVE, J.
(The determination of paraquat (1,1'-dimethyl-4,4'-bipyridylium cation) in urine 5
BIZZI, A. see MARCUCCI, F. 321
BOCK, G. W., SHERWIN, A. L.
(The rapid quantitative determination of diphenyl-hydantoin in plasma, serum, and whole blood of patients with epilepsy) 97
BREIMER, D. D. see VREE, T. B. 365
BRODY, J. I., MERLIE, K.
(Augmentation of the hexose monophosphate shunt in leukemic lymphocytes after plasma fractionation) . . . 437
BROMBACHER, P. J. see PEETERS, J. A. B. M. 467
BROOKS, C. J. W., MIDDLEDITCH, B. S.
(The mass spectrometer as a gaschromatographic detector) 145
BROUGHTON, P. M. G. see ANNAN, W. . . 481
CHAMBERLAIN, J.
(The determination of 6-oxygenated cortisol in evaluating liver function) . . 269
CHONG, Y., SOH, C. C., HO, G. S. RAJARATNAM, R., NONIS, P.
(Serum low density lipoproteins, triglycerides and cholesterol levels in Malaysia) 85
CHULKOVA, T. M., OREKHOVICH, V. N.
(On the quaternary structure of human thrombin) 493
CLAUS, K. D. see PEMBERTON, J. R. . . . 431
CLAVEAU, J. C. see CRAWHALL, J. C. . . . 47
COOKE, B. A. see MOLEN, v.D., H. J. . . . 169
CRAMERS, C. A., RIJKS, J. A.
(Packed versus capillary columns in gas chromatography) 159
CRAWHALL, J. C., MAMER, O., TJOA, S., CLAVEAU, J. C.
(Urinary phenolic acids in tyrosenemia. Identification and quantitation by gas chromatography-mass spectrometry) . 47
DESSAULLES, E. see PAGE, L. B. 55
DEVAUX, P. G. see HORNING, E. C. 135
DIAMANT, Y. Z., SADOVSKY, E., GAL, A.
(Evaluation of the leukocyte alkaline phosphatase activity. Comparison of the biochemical and cytochemical assay) 73
DOCTER, R., HENNEMAN, G.
(Estimation of thyroid hormones by G.L.C.) 297
DURAN, M., see HEIDEN, v.D., C. 289
EBERT, W. see METZ, J. 31
ECCLESTON, D. see ANTUN, F. T. 387
FANELLI, R. see MARCUCCI, F. 321
FISHMAN, L., INGLIS, N. R., FISHMAN, W. H.
(Preparation of two antigens of human liver isoenzymes of alkaline phosphatase) 393
FISHMAN, W. H. see FISHMAN, L. 393
FRATTALI, V. see SHACKELFORD, A. H. . . 13
FREDERICK, M. A. see KLEIJN, v.D., E. . . 345
FRIGERIO, A. see MARCUCCI, F. 321
GAL, A. see DIAMANT, Y. Z. 73
GARATTINI, S. see MARCUCCI, F. 321
GINNEKEN, v., C. A. M. see VREE, T. B. . . 365
GITERSON, A. L., LIE FONG, L. A. S., WEDERFOORT, I. E., SCHOUTEN, H.
(Blood-, urine- and liquor sugar II) . . . 489
GORGELS, J. see VREE, T. B. 333
GORODEZKI, V. K., MIKHAILOFF, V. I., ROSENFELD, E. L.

(Sucrose formation in the human and animal organism) 67
GROVE, J. see BERRY, D. J. 5
HABER, E. see PAGE, L. B. 55
HAMPL, R., STÁRKA, L.
(Determination of dehydroepiandrosterone sulfate in human plasma by competitive binding) 77
HANZLIK, J. see KOWALEWSKI, J. 123
HASHIMOTO, F. see KITAMURA, M 419
HEIDEN, V.D., C. see WADMAN, S. K. . . . 277
HEIDEN, V.D., C., WAUTERS, E. A. K., KETTING, D., DURAN, M., WADMAN, S. K.
(G.L.C. analysis of urinary tyrosine and phenylalanine metabolites in patients with gastrointestinal disorders) 289
HENNEMAN, G. see DOCTER, R. 297
HEREDIA DEL PORTAL, L., LAVIN PALMIERI, M., THIELMANN, K.
(Determination of creatinine in urine. preservation of the sample on filter paper) 487
HILL, R. M. see HORNING, M. G. 261
HIRATSUKA, A. see KITAMURA, M. 419
HO, G. S. see CHONG, Y. 85
HORNING, E. C., DEVAUX, P. G., MOFFAT, A. C., PFAFFENBERGER, C. D., SAKAUCHI, N., HORNING, M. G.
(Gas phase analytical separation applicable to problems in clinical chemistry). 135
HORNING, E. C. see HORNING, M. G. . . . 261
HORNING, M. G. see HORNING, E. C. . . . 135
HORNING, M. G., HUNG, A. HILL, R. M., HORNING, E. C.
(Variations in urinary steroid profiles after birth) 261
HUNG, A. see HORNING, M. G. 261
IIJIMA, N. see KITAMURA, M. 419
INGLIS, N. R. see FISHMAN, L. 393
JACOBS, PH. see WINCKERS, P. L. M. . . . 401
JAMES, V. H. T.
(Steroid G.L.C. methods in diagnostic clinical chemistry) 272
JOLLIF, P. see ANNAN, W. 481
JONG, DE, F. H. see MOLEN, V.D., H. J. . . 169
KAMPEN, V., E. J., ANKER, A. P.
(Steroid spectra, pattern recognition and quantitative analysis) 241
KETTING, D. see HEIDEN, V.D., C. 289
KETTING, D. see WADMAN, S. K. 277
KISHIMOTO, Y. see KURTZ, D. J. 463
KITAMURA, M., IIJIMA, N., HASHIMOTO, F., HIRATSUKA, A.
(Hereditary deficiency of subunit H of lactate dehydrogenase) 419
KLEIJN, V.D., E., BEELEN, G. C., FREDERICK, M. A.
(Determination of tranquillizers by G.L.C. in biological fluids) 345
KLOPPER, A. I.
(An evaluation of the contribution of G.L.C. techniques for the estimation of progesterone and pregnanesteroids) . . 215
KOOREVAAR, G. see STEKELENBURG, G. J. . 305
KOTONEY-AHULU, F. I. D. see RINGELHAHN, B. 63
KOWALEWSKI, J., TOMASZEWSKI, J., HANZLIK, J., ZAWISLAK, H., ZBIKOWSKA, A.
(The elimination of free, peptide-bound and protein-bound hydroxyproline into dialysate during peritoneal dialysis in patients with renal failure) 123
KRISHNASWAMY, K.
(Plasma "cortisol" levels in pellagrins) . 415
KURTZ, D. J., LEVY, H. L., PLOTKIN, W., KISHIMOTO, Y.
(A rapid method for the quantitative analysis of short-chain fatty acids in serum or plasma) 463
LAGG, S. see PAGE, L. B. 55
LAVIN PALMIERI, M. see HEREDIA EEL PORTAL, L. 487
LEVY, H. L. see KURTZ, D. J. 463
LIE FONG, A. L. see GITERSON, A. L. . . . 489
LINDBLAD, B.
(Radiochemical assays for *p*-hydroxyphenylpyruvate hydroxylase in human liver) 113
LOGAN, R. W. see BARNARD, W. P. . . . 377
MACHEAK, M. E. see PEMBERTON, J. R. . . 431
MAESEN, F. P. V. see PEETERS, J. A. B. M. 467
MAKINO, H. see NISHIBE, H. 409
MAMER, O. see CRAWHALL, J. C. 47
MARCUCCI, F., MUSSINI, E., AIROLDI, L., FANELLI, R., FRIGERIO, A., NADAI, DE, F., BIZZI, A., RIZZO, P., MORSELLI, L., GARATTINI, S.
(Analytical and pharmakinetic studies on butyrophenones) 321
MARTIN, A. J. P.
(9th West European Symposium on Clinical Chemistry, Gas Chromatography. Opening) 131
MATSON, R. L. see PEMBERTON, J. R. . . . 431
MATSUDA, I., SUGAI, M., ARASHIMA, S., ANAKURA, M.
(Urinary 5-hydroxy-indolacetic acid in patients with atypical phenylketonuria) 491
MERLIE, K. see BRODY, J. I. 437
METZ, J., EBERT, W., WEICKER, H.
(Gaschromatographische Analyse des Protein- und Kohlenhydratanteiles von Erythrozytenmembranglykoproteinen). 31
MIDDLEDITCH, B. S. see BROOKS, C. J. W. 145
MIKHAILOFF, V. I., see GORODZKI, V. K. . 67
MOFFAT, A. C. see HORNING, E. C. 135
MOHANRAM, M., REDDY, V.
(Urinary excretion of acid mucopolysaccharides in kwashiorkor and vitamin A-defficient children) 93
MOLEN, V.D., H. J., JONG, DE, F. H., COOKE, B. A.
(Some aspects in steroid analysis in the clinical chemical laboratory with special reference to the role of gas-liquid-chromatography (G.L.C.) 169

MORSELLI, L. see MARCUCCI F. 321
MUSKENS, A. see VREE, T. B. 333
MUSSINI, E., see MARCUCCI, F. 321
NADAI, de, F. see MARCUCCI, F. 321
NISHIBE, H., MAKINO, H.
(Investigation of arginase isozyme in erythrocyte) 409
NONIS, P. see CHONG, Y. H. 85
NORYMBERSKI, J. K.
(Evaluation of G.L.C. and other techniques for the estimation of corticosteroids) 187
OREKHOVICH, V. N. see CHULKOVA, T. M. . 493
PAGE, L. B., DESSAULLES, E., LAGG, S., HABER, E.
(Interference with immunoassays of angiotensin I and II by proteins in human plasma) 55
PATERSON, Y.
(A new screening test for serum creatine phosphokinase) 373
PEETERS, J. A. B. M., BROMBACHER, P. J., MAESEN, F. P. V.
(Specific and non-specific precipitins in the serum of patients suffering from "pigeon breeders" disease) 467
PEMBERTON, J. R., MATSON, R. L., CLAUS, K. D., MACHEAK, M. E.
(Changes in plasma enzyme levels of sheep infected with Clostridium novyi, Type B) 431
PÉREZ DÍAZ, A. see HEREDIA DEL PORTAL, L. 487
PFAFFENBERGER, C. D. see HORNING, E. C. 135
PHILLIPS, G. B. see WILLE, L. E. 457
PLOTKIN, W. see KURTZ, D. J. 463
POLLARD, A. C. see WALKER, A. W. . . . 19
PULLAR, I. A. see ANTUN, F. T. 387
RAJARATNAM, R. see CHONG, Y. H. . . . 85
REDDY, V. see MOHANRAM, M. 93
REEN VAN, R. see SHACKELFORD, A. H. . . 13
RIJKS, J. A. see CRAMERS, C. A. 159
RINGELHAHN, B., KOTONEY-AHULU, F. I. D. (Sickle cell crisis and acid-base balance) 63
RIZZO, P. see MARCUCCI, F. 321
ROBERTS, J., AGAR, N. S.
(An improved method for the automated analysis of erythrocyte reduced glutathione) 475
ROSENFELD, E. L. see GORODEZKI, V. K. . 67
ROSSUM, v., J. M.
(G.L.C. in pharmacology and toxicology) 311
ROSSUM, v. J. M. see VREE, T. B. 333
ROSSUM, v., J. M. see VREE, T. B. 365
SADOVSKY, E., DIAMANT, J. Z. 73
SALAKO, L. A.
(Serum electrolytes in hypertension in Nigerians) 105
SAKAUCHI, N. see HORNING, E. C. 135
SCHOUTEN, H. see GITERSON, A. L. 489
SHACKELFORD, A. H., FRATTALI, V., REEN VAN, R.
(The determination of inorganic sulfate by an isotope dilution technique) . . . 13
SHARMAN, D. F. see ANTUN, F. T. 387
SHERWIN, A. L. see BOCK, G. W. 97
SINGH, H. see SUNDARAM, G. S. 425
SNYDER, S., ASHWELL, G.
(Quantitation of specific serum glycoproteins in malignancy) 449
SODHI, H. S. see SUNDARAM, G. S. 425
SOH, C. C. see CHONG, Y. 85
SPRANG, v.D., F. J. see WADMAN, S. K. . . 277
STÁRKA, L. see HAMPL, R. 77
STEKELENBURG, G. J., KOOREVAAR, G.
(Head space analysis) 305
STREET, H. V.
(Determination of barbiturates in blood by G.L.C.) 357
SUGAI, M. see Matsuda, I. 491
SUNDARAM, G. S., SINGH, H., SODHI, H. S.
(Thin-layer chromatographic separation of chenodeoxycholic and deoxycholic acids) 425
THIELMANN, K. see HEREDIA DEL PORTAL, L. 487
TJOA, S. see CRAWHALL, J. C. 47
TOMASZEWSKI, J. see KOWALEWSKI, J. . . . 123
VERMEULEN, A.
(Evaluation of G.L.C. techniques for the estimation of androgens) 223
VÖLLMIN, J. A.
(High resolution gas chromatography of urinary steroids on glass capillary columns) 207
VREE, T. B., BREIMER, D. D., GINNEKEN, v., C. A. M., ROSSUM, v. J. M., ZEEUW, DE, R. A., WITTE, A. H.
(Identification of cannabivarins in hashish by a new method of combined gas chromatography-mass spectrometry) . . 365
VREE, T. B., GORGELS, J., MUSKENS, A., ROSSUM, v., J. M.,
(Deuterated amphetamines) 333
WADMAN, S. K., HEIDEN, v.D., C. KETTING, D. SPRANG, v., F. J.
(Abnormal tyrosine and phenylalanine metabolism in patients with tyrosyluria and phenylketonuria; G.L.C. chromatographic analysis of urinary metabolites) 277
WADMAN, S. K. see HEIDEN, v.D., C. . . . 289
WALKER, A. W., POLLARD, A. C.
(Observations on serum alkaline phosphatase electrophoretic patterns on polyacrylamide gel. With particular reference to the effects of butanol extraction) 19
WAUTERS, E. A. K. see HEIDEN, v.D., C. . 289
WEDERFOORT, I. E. see GITERSON, A. L. . 489
WEICKER, H. see METZ, J. 31
WILLE, L. E., PHILLIPS, G. B.
(Lipoprotein and lipid composition of neonatal serum) 457
WINCKERS, P. L. M., JACOBS, PH.
(A simple automated determination of glucose in body fluids using an aqueous o-toluidine-acetic acid reagent) 401

WITTE, A. H. see VREE, T. B. 365
WORTH, H. G. J.
(A rapid method for glycolipid measurement in spleen) 443
ZAWISLAK, H. see KOWALEWSKI, J. . . . 123
ZBIKOWSKA, A. see KOWALEWSKI, J. . . . 123
ZEEUW, DE, R. A. see VREE, T. B. 365

CLINICA CHIMICA ACTA Vol. 34 (1971)

SUBJECT INDEX

Acid-base balance, in sickle cell crisis (RINGELHAHN, KOTONEY-AHULU) . . 63
Acid mucopolysaccharides, urinary excretion in kwashiorkor and vitamin A-deficient children (Mohanram, Reddy) 93
Aldosterone, G.L.C. in biological fluids (Aakvaag) 197
Alkaline phosphatase, leukocyte, evaluation of activity. Comparison of the biochemical and cytochemical assay. (Diamant, Sadovsky, Gal) 73
— —, serum, observations on electrophoretic patterns on polyacrylamide gel. With particular reference to the effects of butanol extraction. (Walker, Pollard) 19
Amphetamines, deuterated (Vree, Gorgels, Muskens, v. Rossum) 333
Analysis, gas-chromatographic of the protein and carbohydrate moiety of glycoproteins in red cell membranes (METZ, EBERT, WEICKER) 31
Analytical separation techniques, gas phase, applicable to problems in clinical chemistry (HORNING, DEVAUX, MOFFAT, PFAFFENBERGER, SAKAUCHI, HORNING) 135
Androgens, evaluation of G.L.C. techniques for the estimation (VERMEULEN) . . . 223
Angiotensin I, and II, immunoassays, interference by proteins in human plasma (PAGE, DESSAULLES, LAGG, HABER) . . 55
— II, and I immunoassays, interference by proteins in human plasma (PAGE, DESSAULLES, LAGG, HABER) 55
Antigen, preparation of human liver isoenzymes of alkaline phosphatase (FISHMAN, INGLIS, FISHMAN) 393
Arginase isozyme, investigation in erythrocyte (NISHIBE, MAKINO) 409
Assay, biochemical and cytochemical, comparison in evaluation of the leukocyte alkaline phosphatase activity (DIAMANT, SADOVSKY, GAL) 73
—, radiochemical, for *p*-hydroxyphenylpyruvate hydroxylase activity in human liver (LINDBLAD) 113
Autoanalyzer, frequency distribution of errors in the determination of serum urea and electrolyte values (ANNAN, BROUGHTON, JOLLIFF) 481
Automated analysis, an improved method, of erythrocyte reduced glutathione (ROBERTS, AGAR) 475
Barbiturates, determination in blood by G.L.C. (STREET) 357
Biological fluids, determination of tranquillizers by G.L.C. (V.D. KLEIJN, BEELEN, FREDERICK) 345
— —, G.L.C. of aldosterone (Aakvaag) . . 197
Blood, determination of barbiturates by G.L.C. (STREET) 357
— sugar, urine and liquor (GITERSON, LIE FONG, WEDERFOORT, SCHOUTEN) . . 489
Butanol, extraction, the effects of, in observations on serum alkaline phosphatase electrophoretic patterns on polyacrylamide gel (WALKER, POLLARD) 19
Butyrophenones, analytical and pharmakinetic studies (MARCUCCI, MUSSINI, AIROLDI, FANELLI, FRIGERIO, DE NADAI, BIZZI, RIZZO, MORSELLI, GARATTINI) 321
Cancer, quantitation of specific serum glycoproteins (SNYDER, ASHWELL) . . 449
Cannabivarins, identification in hashish by a new method of combined gas chromatography-mass spectrometry (VREE, BREIMER, V. GINNEKEN, V. ROSSUM, DE ZEEUW, WITTE) 365
Capillary columns, glass, high resolution gas chromatography of urinary steroids (VÖLLMIN) 207
— —, versus packed columns in gas chromatography (CRAMERS, RIJKS) . . 159
Carbohydrate, and protein moiety of glycoproteins, gas-chromatographic analysis in red cell membrane (METZ, EBERT, WEICKER) 31
Chenodeoxycholic acid, and deoxycholic acid, thin-layer chromatographic separation (SUNDARAM, SINGH, SODHI) . . 425
Cholesterol, triglycerides and low density lipoproteins levels in serum in Malaysia (CHONG, SOH, HO, RAJARATNAM, NONIS) 85
Clostridium novyi, type B, infection, changes in plasma enzyme levels

(Pemberton, Matson, Claus, Macheak) 431
Corticosteroids, estimation, evaluation of G.L.C. and other techniques (Norymberski) 187
"Cortisol" levels in plasma in pellagrins (Krishnaswamy) 415
Creatine phosphokinase, a new screening test in serum (Paterson) 373
Creatinine, determination in urine; preservation of the sample on filter paper (Heredia del Portal, Pérez Díaz, Lavin Palmieri, Thielmann) 487
Deficiency, hereditary, of subunit H of lactate dehydrogenase (Kitamura, Iijima, Hashimoto, Hiratsuka) . . . 419
Dehydroepiandrosterone sulfate, determination in human plasma by competitive protein binding (Hampl, Stárka) 77
Deoxycholic acid, and chenodeoxycholic acids, thin-layer chromatographic separation (Sundaram, Singh, Sodhi) . 425
Dialysate, elimination of free, peptide-bound and protein-bound hydroxyproline during peritoneal dialysis in patients with renal failure (Kowalewski, Tomaszewski, Hanzlik, Zawislak, Zbikowska) 123
Dialysis, peritoneal, in patients with renal failure, elimination of free, peptide-bound and protein-bound hydroxyproline (Kowalewski, Tomaszewski, Hanzlik, Zawislak, Zbikowska) . . 123
Dilution technique, isotope, for determination of inorganic sulfate (Shackelford, Frattali, Van Reen) 13
Diphenylhydantoin, rapid quantitative determination in plasma, serum, and whole blood of patients with epilepsy (Bock, Sherwin) 97
Electrolytes, in serum in hypertension in Nigerians (Salako) 105
Electrophoretic patterns, on polyacrylamide gel of serum alkaline phosphatase. With particular reference to the effects of butanol extraction (Walker, Pollard) 19
Enzyme level, plasma, of sheep infected with Clostridium novyi, type B Pemberton, Matson, Claus, Macheak) 431
Epilepsy patients, rapid quantitative determination of diphenylhydantoin in plasma, serum and whole blood (Bock, Sherwin) 97
Erythrocyte, investigation of arginase isozyme (Nishibe, Makino) 409
Fatty acids, short-chain, a rapid method for the quantitative analysis in serum or plasma (Kurtz, Levy, Plotkin, Kishimoto) 463
Fluorimetry, for the determination of 4-hydroxy-3-methoxyphenylglycol in urine (Antun, Pullar, Eccleston, Sharman) 387
Frequency distribution of errors, in the determination of serum urea and electrolyte values with the auto-analyzer (Annan, Broughton, Jolliff) 481
Gas-chromatographic, analysis, of the protein and carbohydrate moiety of glycoproteins in red cell membrane (Metz, Ebert, Weicker) 31
— — detector, mass spectrometer (Brooks, Middleditch) 145
Gas chromatography, combined with mass spectrometry in identification of cannabivarins in hashish (Vree, Breimer, v. Ginneken, v. Rossum, De Zeeuw, Witte) 365
— —, high resolution, of urinary steroids on glass capillary columns (Völlmin) 207
— —, mass spectrometry, identification and quantitation of urinary phenolic acids in tyrosinemia (Crawhall, Mamer, Tjoa, Claveau) 47
— —, packed versus capillary columns (Cramers, Rijks) 159
Gas-liquid chromatographic analysis of urinary metabolites in abnormal tyrosine and phenylalanine metabolism in patients with tyrosyluria and phenylketonuria (Wadman, v. d. Heiden, Ketting, v. Sprang) 277
— — chromatography, of aldosterone in biological fluids (Aakvaag) 197
— — — analysis of urinary tyrosine and phenylalanine mtabolites in patients with gastrointestinal disorders (v.d. Heiden, Wauters, Ketting, Duran, Wadman) 289
— — —, determination of barbiturates in blood (Street) 357
— — —, determination of tranquillizers in biological fluids (v.d. Kleijn, Beelen, Frederick) 345
— — —, estimation of thyroid hormones (Docter, Henneman) 297
— — —, evaluation, and other techniques for the estimation of corticosteroids (Norymberski) 187
— — —, evaluation of the contribution of the techniques for the estimation of progesterone and pregnanesteroids (Klopper) 215
— — —, evaluation for the estimation of oestrogens (Adlercreutz) 231
— — —, evaluation of the techniques for the estimation of androgens (Vermeulen) 223
— — —, methods on steroids in diagnostic clinical chemistry (James) 272
— — — in pharmacology and toxicology (v. Rossum) 311
— — —, the role in steroid analysis in the clinical chemical laboratory (v.d. Molen, De Jong, Cooke) 169

Gas phase, analytical separation techniques applicable to problems in clinical chemistry (HORNING, DEVAUX, MOFFAT, PFAFFENBERGER, SAKAUCHI, HORNING) 135
Gastrointestinal disorders, G.L.C. analysis of urinary tyrosine and phenylalanine metabolites (V.D. HEIDEN, WAUTERS, KETTING, DURAN, WADMAN) 289
Glucose, in body fluids, a simple automated determination in body fluids using an aquous *o*-toluidine acetic acid reagent (WINCKERS, JACOBS) 401
Glutathione, erythrocyte reduced, an improved method for the automated analysis (ROBERTS, AGAR) 475
Glycolipid measurement, a rapid method in spleen (WORTH) 443
Glycoproteins, in red cell membrane, gas-chromatographic analysis of the protein and carbohydrate moiety (METZ, EBERT, WEICKER) 31
— specific, in serum, quantitation in malignancy (SNYDER, ASHWELL) . . . 449
Hashish, identification of cannabivarins by a new method of combined gas chromatography-mass spectrometry (VREE, BREIMER, V. GINNEKEN, V. ROSSUM, DE ZEEUW, WITTE) 365
Head space analysis (STEKELENBURG, KOOREVAAR) 305
Hexose monophosphate shunt, augmentation in leukemic lymphocytes after plasma fractionation (BRODY, MERLIE) 437
5-hydroxy-indolacetic acid, urinary, in patients with atypical phenylketonuria (MATSUDA, SUGAI, ARASHIMA, ANAKURA) 491
4-Hydroxy-3-methoxyphenylglycol, fluorimetric determination in urine (ANTUN, PULLAR, ECCLESTON, SHARMAN) . 387
p-Hydroxyphenylpyruvate hydroxylase, radiochemical assay of activity in human liver (LINDBLAD) 113
Hydroxyproline, free, peptide-bound and protein-bound, elimination in dialysate during peritoneal dialysis in patients with renal failure (KOWALEWSKI, TOMASZEWSKI, HANZLIK, ZAWISLAK, ZBIKOWSKA) 123
Hypertension, Nigerians, serum electrolytes (SALAKO) 105
Immunoassay, angiotensin I and II, interference by proteins in human plasma (PAGEL, DESSAULLES, LAGG, HABER) . 55
Interference, with immunoassays of angiotensin I and II, by proteins in human plasma (PAGE, DESSAULLES, LAGG, HABER) 55
Isoenzymes, of alkaline phosphatase, human liver, preparation of two antigens (FISHMAN, INGLIS, FISHMAN) . . 393
Isotope, dilution technique, for determination of inorganic sulfate (SHACKELFORD, FRATTALI, VAN REEN) 13
Kwashiorkor, vitamin A-deficient children, urinary excretion of acid mucopolysaccharides (MOHANRAM, REDDY) . 93
Lactate dehydrogenase, hereditary deficiency of subunit H (KITAMURA, IIJIMA, HASHIMOTO, HIRATSUKA) . . . 419
LAP activity evaluation. Comparison of the biochemical and cytochemical assay. (DIAMANT, SADOVSKY, GAL) . . 73
Leukemia lymphocytes, augmentation of hexose monophosphate shunt after plasma fractionation (BRODY, MERLIE) 437
Leukocyte, evaluation of the alkaline phosphatase activity. Comparison of the biochemical and cytochemical assay. (DIAMANT, SADOVSKI, GAL) . . 73
Lipid composition, and lipoprotein composition of neonatal serum (WILLE, PHILLIPS) 457
Liquor sugar, blood and urine (GITERSON, LIE FONG, WEDERFOORT, SCHOUTEN) . 489
Liver function, evaluation, determination of 6-oxygenated cortisol (CHAMBERLAIN) 269
—, human, isoenzymes of alkaline phosphatase, preparation of two antigens (FISHMAN, INGLIS, FISHMAN) 393
—, —, radiochemical assays for *p*-hydroxyphenylpyruvate hydroxylase activity (LINDBLAD) 113
Lipoprotein, and lipid composition of neonatal serum (WILLE, PHILLIPS) . . 457
—, low density, triglycerides and cholesterol levels in serum in Malaysia (CHONG, SOH, HO, RAJARATNAM, NONIS) . . . 85
Mass spectrometer, as a gaschromatographic detector (BROOKS, MIDDLEDITCH) 145
— spectrometry, combined with gas chromatography in identification of cannabivarins in hashish (VREE, BREIMER, V. GINNEKEN, V. ROSSUM, DE ZEEUW, WITTE) 365
— —, gas chromatography, identification and quantitation of urinary phenolic acids in tyrosinemia (CRAWHALL, MAMER, TJOA, CLAVEAU) 47
Method, automated, for urinary "oestriol" determination in pregnant and nonpregnant subjects (BARNARD, LOGAN) . 377
—, fluorimetric, for the determination of 4-hydroxy-3-methoxyphenylglycol in urine (ANTUN, PULLAR, ECCLESTON, SHARMAN) 387
—, rapid for glycolipid measurement in spleen (WORTH) 443
—, — for the quantitative analysis of short-chain fatty acids in serum or plasma (KURTZ, LEVY, PLOTKIN, KISHIMOTO) 463
—, simple automated, for determination of glucose in body fluids using an aquous *o*-toluidine-acetic acid reagent

(WINCKERS, JACOBS) 401
Newborn, variations in urinary steroid profiles (HORNING, HUNG, HILL, HORNING) 261
"Oestriol" urinary, determination, an automated method in pregnant and non-pregnant subjects (BARNARD, LOGAN) 377
Oestrogens, evaluation of G.L.C. techniques for the estimation (ADLERCREUTZ) 231
Opening of 9th West European symposium in clinical chemistry (MARTIN) 131
6-Oxygenated cortisol, determination in evaluating liver function (CHAMBERLAIN) 269
Packed columns, versus capillary columns on gas chromatography (CRAMERS, RIJKS) 159
Paraquat (1,1′-dimethyl-4,4′-bipyridylium cation), determination in urine (BERRY, GROVE) 5
Pattern recognition, steroid spectra and quantitative analysis (v. KAMPEN, ANKER) 241
Pellagrins, plasma "cortisol" levels (KRISHNASWAMY) 415
Pharmacology, and toxicology; G.L.C. (v. ROSSUM) 311
Phenolic acids, urinary, in tyrosinemia. Identification and quantitation by gas chromatography-mass spectrometry (CRAWHALL, MAMER, TJOA, CLAVEAU). 47
Phenylalanine and tyrosine metabolism, abnormal in patients with tyrosyluria and phenylketonuria, G.L.C. analysis of urinary metabolites (WADMAN, v.D. HEIDEN, KETTING, v. SPRANG) . . . 277
—, urinary, and urinary tyrosine metabolites G.L.C. analysis in patients with gastrointestinal disorders (v.D. HEIDEN, WAUTERS, KETTING, DURAN, WADMAN) 289
Phenylketonuria, atypical, urinary 5-hydroxy-indoleacetic acid (MATSUDA, SUGAI, ARASHIMA, ANAKURA) 491
—, and tyrosulyria patients, abnormal tyrosine and phenylalanine metabolism; G.L.C. analysis or urinary metabolites (WADMAN, v.D. HEIDEN, KETTING, SPRANG). 277
"Pigeon breeders' disease", patients, specific and non-specific precipitins in serum (PEETERS, BROMBACHER, MAESEN) 467
Plasma, "cortisol" levels in pellagrins (KRISHNASWAMY) 415
—, enzyme level changes in sheep infected with Clostridium novyi, type B (PEMBERTON, MATSON, CLAUS, MACHEAK) . 431
— fractionation, augmentation of the hexose monophosphate shunt in leukemic lymphocytes (BRODY, MERLIE). . 437
—, human, determination of dehydroepiandrosterone sulfate by competitive protein binding (HAMPL, STÁRKA) . . 77
—, —, interference of proteins with immunoassays of angiotensin I and II (PAGE, DESSAULLES, LAGG, HABER). 55
—, or serum, a rapid method for the quantitative analysis of short-chain fatty acids (KURTZ, LEVY, PLOTKIN, KISHIMOTO) 463
—, —, and whole blood of patients with epilepsy, rapid quantitative determination of diphenylhydantoin (BOCK, SHERWIN) 97
Polyacrylamide gel, serum alkaline phosphatase electrophoretic patterns. With particular reference to the effects of butanol extraction (WALKER, POLLARD) 19
Precipitins, specific and non-specific in the serum of patients suffering from "pigeon breeders' disease" (PEETERS, BROMBACHER, MAESEN) 467
Pregnanesteroids, and progesterone, an evaluation of the contribution of G.L.C. techniques for the estimation (KLOPPER) 215
Progesterone, and pregnanesteroids, an evaluation of the contribution of G.L.C. techniques for the estimation (KLOPPER) 215
Protein, and carbohydrate moiety of glycoproteins, gas-chromatographic analysis in red cell membrane (METZ, EBERT, WEICKER) 31
—, competitive binding, determination of dehydroepiandrosterone sulfate in human plasma (HAMPL, STÁRKA) . . . 77
—, in human plasma, interfering with immunoassays of angiotensin I and II (PAGE, DESSAULLES, LAGG, HABER) 55
Quantitative analysis, a rapid method, of short-chain fatty acids in serum or plasma (KURTZ, LEVY, PLOTKIN, KISHIMOTO) 463
— —, steroid spectra and pattern recognition (v. KAMPEN, ANKER) 241
Quaternary structure of human thrombin (CHULKOVA, OREKHOVICH) 493
Radiochemical, assays for *p*-hydroxyphenylpyruvate hydroxylase activity in human liver (LINDBLAD) 113
Red cell membrane, gas-chromatographic analysis of the protein and carbohydrate moiety of glycoproteins (METZ, EBERT, WEICKER). 31
Sample preservation, on filter paper, determination of creatinine (HEREDIA DEL PORTAL, LAVIN PALMIERI, THIELMANN) 487
Screening test, new, for serum creatine phosphokinase (PATERSON) 373
Serum, alkaline phosphatase, observations on electrophoretic patterns on polyacrylamide gel. With particular reference to the effects of butanol ex-

traction (WALKER, POLLARD) 19
—, creatine phosphokinase, a new screening test (PATERSON) 373
—, electrolytes, in hypertension in Nigerians (SALAKO) 105
—, low density lipoproteins, triglycerides and cholesterol levels in Malaysia (CHONG, SOH, HO, RAJARATNAM, NONIS) 85
—, neonatal, lipoprotein and lipid composition (WILLE, PHILLIPS) 457
—, of patients suffering from "pigeon breeders' disease", specific and non-specific precipitins (PEETERS, BROMBACHER, MAESEN) 467
—, or plasma, a rapid method for the quantitative analysis of short-chain fatty acids (KURTZ, LEVY, PLOTKIN, KISHIMOTO) 463
—, plasma and whole blood of patients with epilepsy, rapid quantitative determination of diphenylhydantoin (BOCK, SHERWIN) 97
—, specific glycoproteins, quantitation in malignancy (SNYDER, ASHWELL) . . . 449
—, urea and electrolyte values determination with the autoanalyzer. Frequency distribution of errors (ANNAN, BROUGHTON, JOLLIFF) 481
Sheep, infected with Clostridium novyi, type B, changes in plasma enzyme levels (PEMBERTON, MATSON, CLAUS, MACHEAK) 431
Sickle cell crisis, and acid-base balance (RINGELHAHN, KOTONEY-AHULU) . . 63
Steroid analysis, some aspects in the clinical chemical laboratory with special reference to the role of gas-liquid chromatography (V.D. MOLEN, DE JONG, COOKE) 169
—, G.L.C. methods in diagnostic clinical chemistry (JAMES) 272
— spectra, pattern recognition and quantitative analysis (V. KAMPEN, ANKER) . 241
—, urinary, high resolution gas chromatography on glass capillary columns (VÖLLMIN) 207
—, —, variation in profiles after birth (HORNING, HUNG, HILL, HORNING) . . 261
Subunit H, hereditary deficiency in lactate dehydrogenase (KITAMURA, IIJIMA, HASHIMOTO, HIRATSUKA) 419
Sucrose, formation in the human and animal organism (GORODEZKI, MIKHAILOFF, ROSENFELD) 67
Sulfate, inorganic, determination by isotope dilution technique (SHACKELFORD, FRATTALI, VAN REEN) 13
Thin layer chromatography, separation of chenodeoxycholic and deoxycholic acids (SUNDARAM, SINGH, SODHI) . . . 425
Thrombin, human, quaternary structure (CHULKOVA, OREKHOVICH) 493
Thyroid hormones, estimation by G.L.C. (DOCTER, HENNEMAN) 297
o-Toluidine-acetic acid reagent, aqueous, for a simple automated determination of glucose in body fluids (WINCKERS, JACOBS) 401
Toxicology, and pharmacology; G.L.C. (V. ROSSUM) 311
Tranquillizers, determination by G.L.C. in biological fluids (V.D. KLEIJN, BEELEN, FREDERICK) 345
Triglycerides, low density lipoproteins and cholesterol levels in serum in Malaysia (CHONG, SOH, HO, RAJARATNAM, NONIS) 85
Tyrosine, and phenylalanine metabolism, abnormal, in patients with tyrosyluria and phenylketonuria; G.L.C. analysis of urinary metabolites (WADMAN, V.D. HEIDEN, KETTING, V. SPRANG) 277
—, urinary, and urinary phenylalanine metabolites, G.L.C. analysis in patients with gastrointestinal disorders (V.D. HEIDEN, WAUTERS, KETTING, DURAN, WADMAN) 289
Tyrosinemia, urinary phenolic acids. Identification and quantitation by gas chromatography-mass spectrometry (CRAWHALL, MAMER, TJOA, CLAVEAU) 47
Tyrosyluria, and phenylketonuria patients, abnormal tyrosine and phenylalanine metabolism; G.L.C. analysis of urinary metabolites (WADMAN, V.D. HEIDEN, KETTING, V. SPRANG) 277
Urine, determination of creatinine; preservation of the sample on filter paper (HEREDIA DEL PORTAL, PÉREZ DÍAZ, LAVIN PALMIERI, THIELMANN) . . . 487
—, excretion of acid mucopolysaccharides in kwashiorkor and vitamin A-deficient children (MOHANRAM, REDDY) . . 93
—, a fluorimetric determination of 4-hydroxy-3-methoxy-phenylglycol (ANTUN, PULLAR, ECCLESTON, SHARMAN) 387
—, 5-hydroxy-indolacetic acid in patients with atypical phenylketonuria (MATSUDA, SUGAI, ARASHIMA, ANAKURA) . . 491
—, metabolites, G.L.C. analysis in abnormal tyrosine and phenylalanine metabolism in patients with tyrosyluria and phenylketonuria (WADMAN, V.D. HEIDEN, KETTING, V. SPRANG) . . 277
—, "oestriol" determination, an automated method in pregnant and non-pregnant subjects (BARNARD, LOGAN) . 377
—, paraquat (1,1'-dimethyl-4,4'-bipyridylium cation) determination (BERRY, GROOVE) 5
—, phenolic acids in tyrosinemia. Identification and quantitation by gas chromatography-mass spectrometry (CRAWHALL, MAMER, TJOA, CLAVEAU) . . . 47
—, steroids, high resolution gas chromatography on glass capillary columns (VÖLLMIN) 207

— sugar, blood and liquor (GITERSON, LIE FONG, WEDERFOORT, SCHOUTEN) . . . 489
—, tyrosine and phenylalanine metabolites, G.L.C. analysis, in patients with gastrointestinal disorders (V.D. HEIDEN, WAUTERS, KETTING, DURAN, WADMAN) 289
—, variations in steroid profiles after birth (HORNING, HUNG, HILL, HORNING) . . 261
Vitamin A-deficiency, and kwashiorkor children, urinary excretion of acid mucopolysaccharides (MOHANRAM, REDDY) 93
Whole blood, serum and plasma of patients with epilepsy, rapid quantitative determination of diphenyldantoin (BOCK, SHERWIN) 97